

Product Features

- Small sized and lightweight
- Easy and Fast Installations
- Excellent reliability and long term stability
- Intrinsically safe design
- Excellent Mechanical and Chemical Resistance
- High sensitivity and accuracy
- Large scale usage possible
- Zero power and Immunity to EMI/RFI
- Ideal & Cost Efficient Replacement For Conventional Temperature Sensing

Overall Description

The FOS10 series Fiber Optic Sensors are a complete solution for most industrial temperature monitoring and indicating applications. They are based on fiber Bragg grating (FBG) technology, specially designed to make fiber handling easy and sensor installation quick and repeatable.

These sensors have optimum accuracy and performance. FOS10 is offered with three packaging options that are very similar to conventional RTDs, and Thermocouples. The FOS10 can be an ideal and easy replacement for most conventional temperature sensors.

Technical Description

FOS10 works by installing at least one Fiber Bragg Grating (FBG) segment into a fiber optic cable; tens or hundreds of FBGs can be installed into one cable and integrated simultaneously within a single measuring system, such as Intempco's FOD01 kit.

An FBG is a unique optical sensor: It reflects a unique narrow bandwidth of light, which truly responds to changes in temperature, and it is not affected by external conditions.

The effect is a very low cost mechanism ideal for distributed monitoring of temperature within large structures, large distances, and machinery.

Applications

- Concrete Structures such as Bridges, High-rise Buildings
- Electric Generators
- Tunnels: underwater, road, canal, or metro tunnels
- Onshore and Offshore sites in gas & oil industry
- Observing temperatures in flow lines and reservoirs
- Cold and Hot Spots in facilities

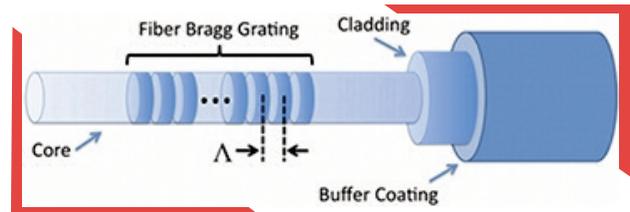


Figure 1a. An Expanded view of an FBG segment within fiber cable.

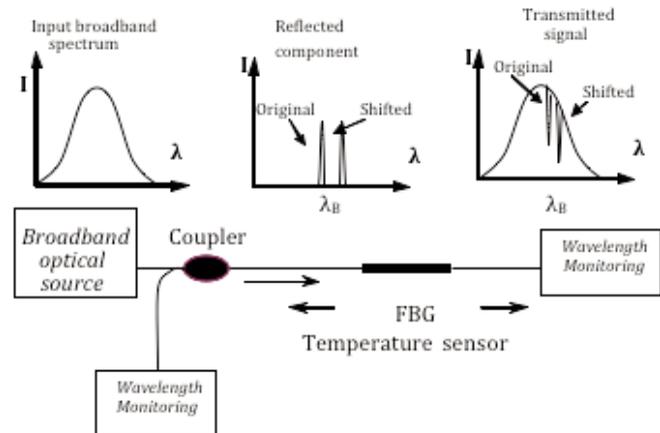


Figure 1b. An overview of the entire fiber optic sensing system.

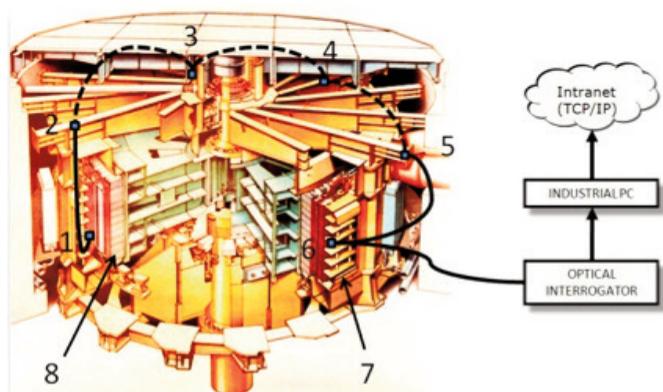


Figure 1c. An example application of using a fiber optic sensor to monitor a generator



Figure 1d. An example application of using a fiber optic sensor to monitor strain and temperature on bridges and beams

Figure 2. Fiber optic cable with general protection for the FBG sensor

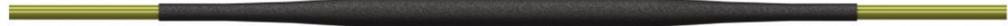


Figure 3. Fiber optic cable with embedded protection for the FBG sensor



Figure 4. Fiber optic cable with welded protection for the FBG sensor



Figure 5. Example of a single fiber optic cable with two different terminations. **A** shows an FC/APC connector and **B** shows an LC/APC connector

Note: Fiber optic cable can have different colors, depending on its type and application

Ordering & Accessories Information

To order the fiber optic cable (with or without FBG sensors), contact intempco by phone or online.

- Length of fiber optic cable: (either in meters, kilometers, feet, or miles)
- Quantity of the FBG sensors within the cable
- Connector termination on either side of cable (see figure 5 above)
- Protection cover option (general, embedded, or welded)

